(No Model.) 2 Sheets—Sheet 1.

J. N. McINTIRE.

DEVICE FOR ENABLING STANDING PASSENGERS IN STREET CARS TO STEADY THEMSELVES, &c.

No. 584,133. Patented June 8, 1897.

Fig. 3,

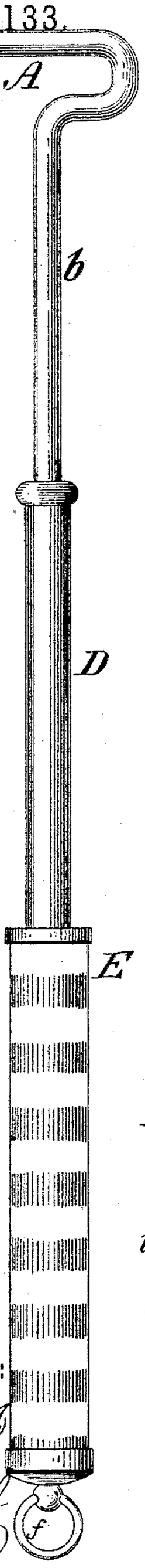


Fig. 4,

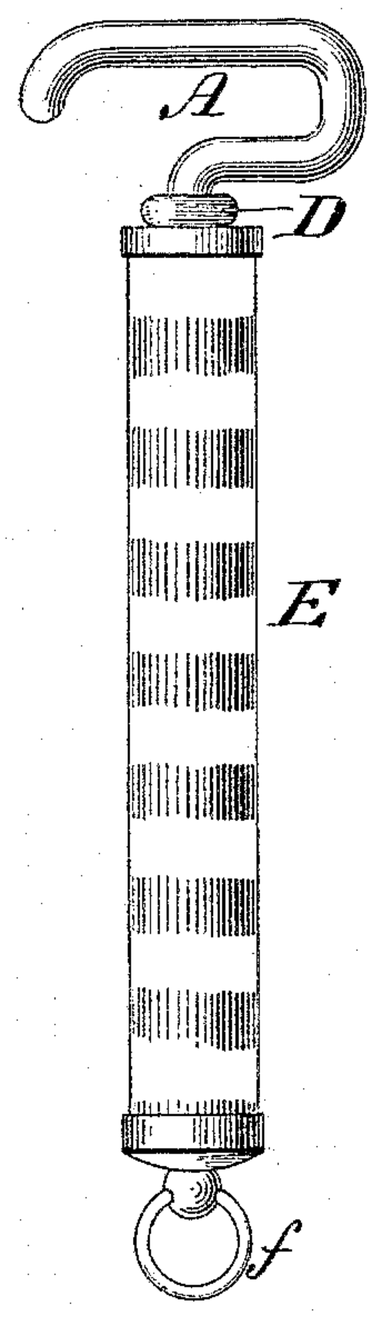


Fig. 2,

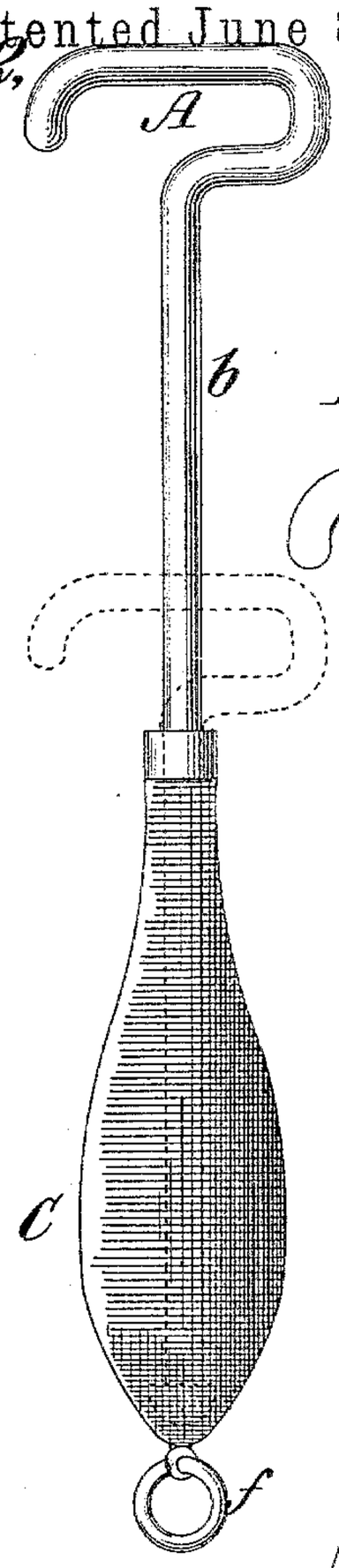


Fig. 1,

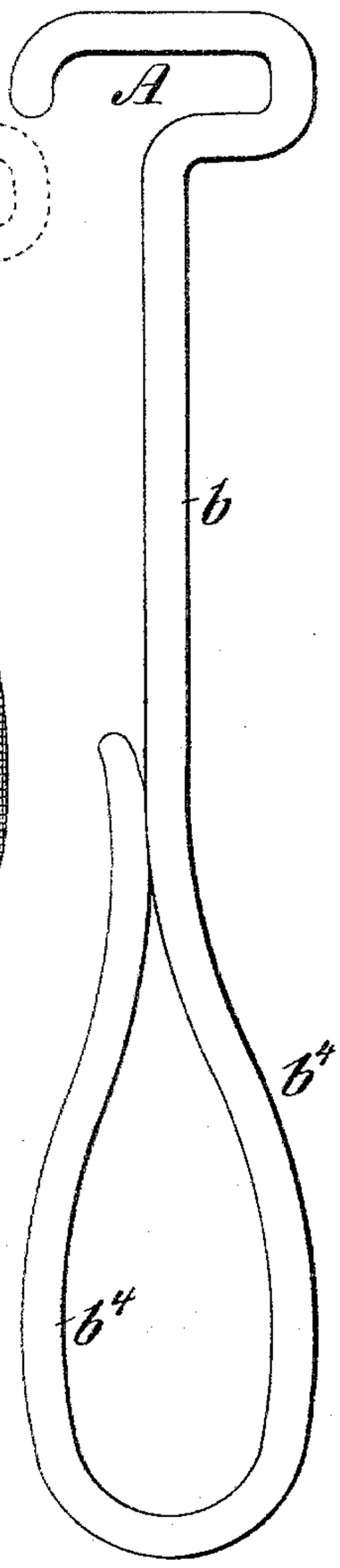


Fig. 5,

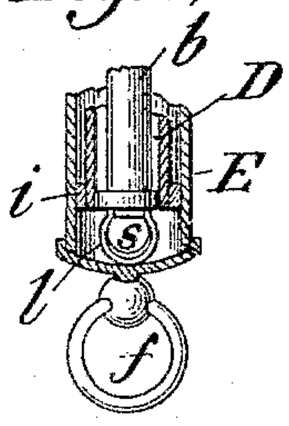
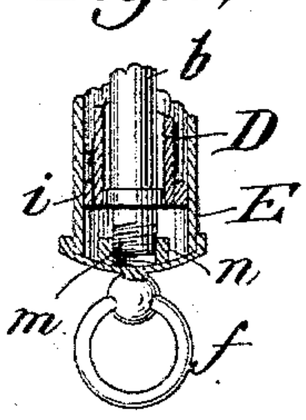


Fig. 6,



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(No Model.) 2 Sheets—Sheet 2.

J. N. McINTIRE.

DEVICE FOR ENABLING STANDING PASSENGERS IN STREET CARS TO STEADY THEMSELVES, &c.

No. 584,133. Patented June 8, 1897.

Fig. 7.

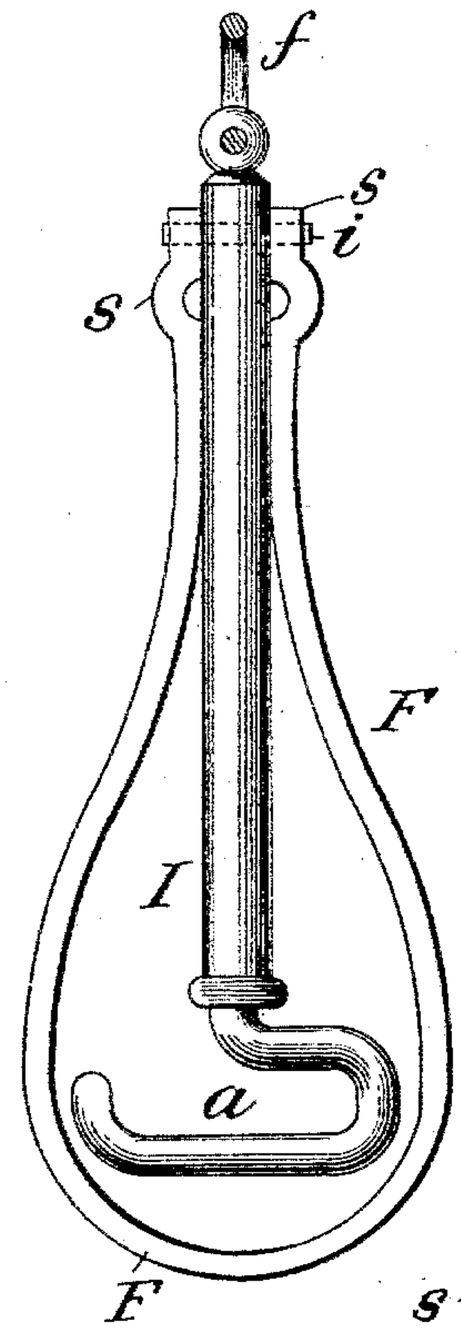


Fig. 8.

Fig. 10.

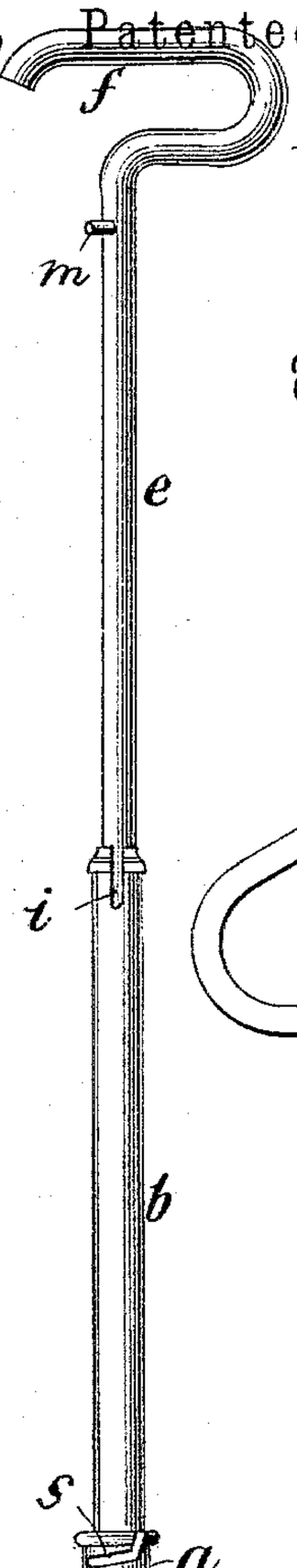


Fig. 11.

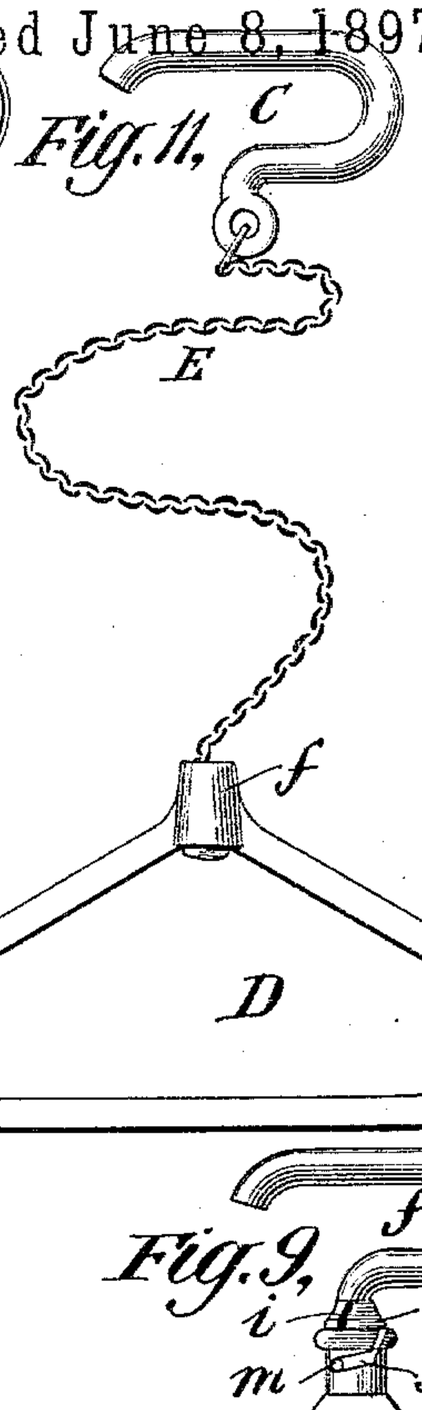
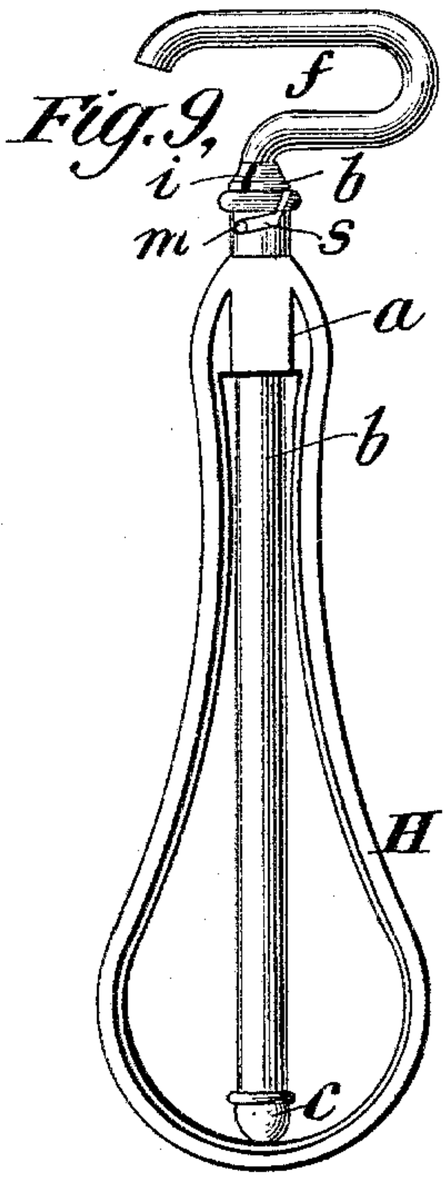


Fig. 9.



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DEVICE FOR ENABLING STANDING PASSENGERS IN STREET-CARS TO STEADY THEMSELVES, &c.

SPECIFICATION forming part of Letters Patent No. 584,133, dated June 8, 1897.

Application filed August 10, 1896. Serial No. 602,221. (No model.)

To all whom it may concern:

Be it known that I, JACOB N. McINTIRE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Device to Enable Standing Passengers in Street-Cars to Steady Themselves with the Usual Hand-Straps Thereof, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

As is well known to those who have ever ridden in street-cars, the depending straps or other devices with which such cars are usually provided, while they may be grasped and used with considerable convenience by men, are of little practical service to women and girls who may have to ride standing in the car, because it is usually so inconvenient and uncomfortable for a woman to stand in the attitude necessary to hold onto the car-strap that she prefers to dispense entirely with the usual strap device and aid designed to be afforded to passengers by these car-strap devices. It is impracticable to have the hanging straps sufficiently long to afford a convenient means of support to women and girls, because in such cases these pendent devices would be in the way of persons occupying seats on either side of the car.

To overcome the great discomfort to women who attempt to hold onto and thus derive some support from these hanging straps, it has been suggested to have these straps distensible, so that on reaching up and grasping the loop-like portion of the strap the latter might be pulled down to such an extent as to permit the person holding onto its lower end to assume an attitude in which the hand and arm would not have to occupy a position inconvenient to one clad in feminine garments, and I believe patents have been granted on one or more forms of distensible car-straps so devised that when freed from the pull of the person who might grasp them for support while riding in a standing position they would contract or draw up to about the condition of the ordinary non-distensible car-strap, and so be out of the way of the sitting passengers when not in use; but such distensible and automatically-contractible holder devices have not apparently proven of much utility. At least they have not gone into practical use to any noticeable extent, mainly because of the liability of any such adjustable devices getting out of working order and then hanging too low and in the way when not being used, and, furthermore, because for use by men such pull-down holdfast devices are not as desirable as the shorter straps that are not convenient for women to use.

My invention has for its object to make some provision for the comfort and convenience mainly of women and girls who have to often ride standing in crowded street-cars, in which at present they must either hold onto the uncomfortably-high-up ordinary car-strap or stand without any means of steadying themselves when the car stops and starts or runs unsteadily or passes around curves, &c.; and to this main end and object my invention may be said to consist, primarily, in a device or instrument adapted to be conveniently carried by ladies and girls and formed or provided at one end with a hook-like device which may be easily but securely engaged with and conveniently disengaged from the hand-loop of an ordinary car-strap, and having the other end formed or provided with a suitable handle or handpiece which may be securely grasped in the hand, all in such manner as will be hereinafter more fully described, and so that by the use of such an implement or device ladies and girls may comfortably steady themselves while riding in a standing position in the car; and my invention may be said to further consist in such an implement or device made distensible and contractible or made telescopical, so that it may be shortened or closed up for convenience in carrying it around in the hand or on the person and can be lengthened out for use in the car, all as will be hereinafter more fully explained.

To enable those skilled in the art to which my invention relates to make and use the latter, I will now proceed to more fully describe the construction and operation of my new device, referring by letters to the accompanying drawings, which make part of this specification, and in which I have shown my invention carried into effect in those forms in which I have so far successfully practiced it.

In the drawings, Figure 1 is a side view or elevation of a device made according to my invention. Fig. 2 is a similar view showing a modified form of the device, the dotted lines therein illustrating the two relatively-movable parts of the strap-holder in a closed-up condition. Fig. 3 is a side view or elevation of another form of implement, showing a modification comprising three parts arranged telescopically and showing the strap-holder in its distended condition. Fig. 4 is a side elevation of the same device, but with the telescopical parts closed together. Fig. 5 is a detail partial longitudinal section showing one means for impositively locking the parts in the closed-up condition seen at Fig. 4. Fig. 6 is a similar detail view showing simply another form of locking device. Fig. 7 is an elevation of still another form of my new device in a closed-up condition. Fig. 8 is an elevation of the same, but with the parts opened out or distended ready for use. Fig. 9 is a view with the parts closed up of still another species of the implement. Fig. 10 is an elevation of the same, but with the parts opened out or extended as they should be during the use of the strap-holder in a car. Fig. 11 is an elevation showing still another modification of my invention.

In the several figures wherever the same parts are shown they will be found designated by the same letter of reference.

In that form of my new device shown at Fig. 1 the implement is composed, as shown, of a single metallic rod or bar suitably bent into the proper shape to form at one end the strap-hook or holder A and at the other end a sort of hand-loop b^4, these two parts being connected by the integral stem-like portion *b*. This form of the new device is exceedingly simple and can be very cheaply manufactured, and the metallic stock of which it is composed can be either polished or plated to beautify it in appearance and prevent any disfigurement of the surface to be grasped by the hand, which might result from rust if the device be formed of steel or iron, and to insure perfect cleanliness of this part of the holder. The loop-like hand portion b^4 may be most conveniently grasped by the hand of the person, although this precise form of the handle part of the device may of course be varied, if deemed expedient. The device may be made in two or three different sizes as to length to suit the height of different women and girls, although the shortest length for persons not unusually tall should, I think, be from seven to nine inches.

In that form of the instrument or device seen at Fig. 2, A is a hook formed, preferably, of a stout metal rod or wire and having an integral stem or straight extension *b*, the end of which is provided with the handle C, and in using the implement the person having it in hand simply reaches up with it and engages the hook A with the hand-loop of the ordinary car-strap, and then, firmly grasping the handle C, is enabled to steady herself while standing in the moving car. The size and proportions of the parts of the implement may be varied more or less, of course, and the handle C may be either of metal and may be made hollow to be light, or it may be made of wood or any other desirable substance, the materials and finish of the manufactured device being varied to suit the different grades of purchasers of such an article. In this form of the device, in lieu of having the metallic stem *b* rigidly connected with the handle C, the latter may be made hollow or be cored out, and the two parts of the device may be arranged, as indicated by the dotted lines, so that the stem *b* may be slid down within the handle C when the implement is in disuse to make the whole device shorter and more compact and thus more convenient for carriage in the pocket or about the person of the user, and when thus made to close up and be pulled out or extended the parts may of course be made much shorter than when movably connected together, as indicated by the full lines at Fig. 2.

In any and every form of my device the hook A should be made of such shape and size as to easily and securely engage with the hand-loop of the ordinary hanging car-strap without operating to spoil or unduly wear the said loops, and the end of the handle C may be provided with a small ring or eye *f*, as shown, to facilitate the carriage of the implement by engaging the said ring *f* with a belt-hook or chatelaine-hook worn by the woman or girl who may want to carry one of the strap-holder devices, or, if found more convenient, the implement itself may be carried in the hand or in the dress or coat pocket, or it may have its hook A coupled to a belt or other device of the woman's costume.

In the modification seen at Figs. 3 and 4 the metallic rod *b* (with a hook A at one end) is combined telescopically with a tube D, which in turn is arranged to slide within the handpiece or larger tube E, these three parts E, D, and *b* being arranged to slide together or close up into the condition seen at Fig. 4 and to be pulled out, as shown at Fig. 3.

When in the distended condition, (seen at Fig. 3,) the implement is used in the same manner as above explained with reference to the article shown at Fig. 2, and when in disuse the parts are closed up, as shown at Fig. 4, so that the implement will be shorter than that form of instrument seen in full lines at Fig. 2, though when distended for use it will be much longer, say twelve or fifteen inches in length. Hence for use by many persons, especially short women or very small girls, this three-part telescopic species of strap-grasping implement may be deemed most desirable, though not so simple in construction or economic of manufacture as the species seen at Figs. 1 and 2. In this telescopic form of device some means may be provided for retaining the parts in a closed-up condition against

casual distention to render the implement more convenient in carrying it about in the hand or suspended by the ring *f*, and at Figs. 5 and 6 I have shown two forms of locking device, that seen at Fig. 5 comprising a grasping or forked spring *l*, that grips the spherically-shaped inner end *s* of the rod *b*, as shown, while that seen at Fig. 6 comprises an internally-threaded cup *n*, fast to the interior of the head of tube E, with which cup engages the threaded end *m* of the rod *b*. In the case of the locking device seen at Fig. 5 the spherical head enters into the grasp of spring *l* (when the telescopic parts are pushed together) and is held by the latter against casual separation, though by holding the tube E in one hand and pulling on hook A with the other the parts of the implement are easily pulled out to assume the position seen at Fig. 3. In the use of the devices seen at Fig. 6 the parts are of course fastened and unfastened by holding the handle E in one hand and rotating the hooked bar *b* (in one or the other direction) with the other hand. Of course some entirely different means than either of those shown may be employed, and in lieu of using some means to thus detain the parts by locking the lower end of the rod *b* to the lower end of the tube E some suitable catch may be employed to lock the upper portion of said rod to the upper end of said tube.

In the form of device shown at Figs. 7 and 8, A is a round bar or rod having a strap-engaging hook *a* formed at one end and arranged to slide bodily in and out in a tube I, and the said tube I (which is closed at one end and which is at its closed end preferably provided with a small ring *f*) is pivotally connected by a pin *i* to the smaller end or portion of the handpiece F. This handpiece F is, in the case shown, composed of a single bar or piece of metal of suitable size, either bent or cast (malleable) in the form shown, and made so that its ends *s s* will be capable of slightly springing apart and automatically resuming their normal relative positions. As the inner surfaces of these end portions *s* are concaved or slightly hollowed out to conform to the curvature of the exterior of tube I, it follows that when in either the position seen at Fig. 7 or that shown at Fig. 8 the encompassing jaw-like portions *s* of the handpiece F will operate to hold the said tube I in such relative position to the springy ends *s* of the handpiece. In the opening out of the device from the condition of disuse, in which it is shown at Fig. 7, to the condition (seen at Fig. 8) ready for use, the combined parts A and I are first turned on the pivotal connection or pintle *i* until the tube I is brought into the position seen at Fig. 8, and then the stem A is simply pulled out of the tube, as also exhibited in said last-mentioned figure. Of course in thus turning the tube I on the pintle *i* the clamping or jaw-like ends *s* of the handpiece F are sprung apart sufficiently to let the end of tube I assume a position transverse to that seen in the drawings, and then the said ends approach each other again by their natural spring, so as to again clasp or confine the tube in the position in which it appears at Fig. 8, and during this turning operation and the distention and contraction of the spring ends *s* of the part F at least one of the ends *s* must be permitted some movement relatively to the pintle *i* endwise of the latter. To permit this necessary relative movement of these parts without danger of any possible derangement of the hinge-like connection between I and F, the pin *i* may either be made slightly longer than the hole (in the combined parts) in which it is arranged and have both of its ends formed with heads, or, as shown, said pintle *i* may be made fast in one of the ends *s* and free to move longitudinally within the other one.

These and other mechanical details may of course be varied more or less, and in carrying into effect my invention both the sizes and proportions of some or all of the parts may be varied without departing from the pith of my invention, which lies in the idea of a series of parts, including the hooked rod A, arranged telescopically and combined with a hoop-like handpiece, so as to turn into and be swung out of the said handle after the fashion shown.

A car-strap-grasping device or implement thus made, while it will have considerable length when distended ready for use, as seen at Fig. 8, will when closed up for carriage, as seen at Fig. 7, be very compact. In this closed-up condition, as seen at Fig. 7, the device or implement will remain so against any casual distention of the parts and may be very conveniently carried by a lady either by suspending it by its ring *f* to a chatelaine or other hook worn by her or in the hand or in her pocket. When opened out or distended into the condition seen at Fig. 8, the parts (by having the rod A slide a little hard in the tube I) will retain this relative position while the user, having hold of the part F, reaches up with a hook *a* to effect an engagement of said hook with the loop of the car-strap, because the spring-jaws or clamping ends *s* of the handle operate to sustain or maintain the tube I in the relative position of distention shown.

At Figs. 9 and 10 the implement is made more after the fashion of that one seen at Figs. 3 and 4, though, unlike said device, it has a loop-like handle or handpiece, after the fashion of the species seen at Figs. 7 and 8, but has a handpiece that is rigid and with which the second part of the device is not hinged, as it is at Figs. 7 and 8. In the form shown at Figs. 9 and 10 the handpiece H is loop-like, as seen, and is formed with an integral tubular stock or part *a*, within which is fitted to slide endwise a tube *b*, which is formed or provided at its inner end with a head or stop *c*. Within this tube *b* is arranged a sliding rod *e*, that is formed at its

outer end with the hook *f*, adapted to grasp the car-strap, and the arrangement and operation of these parts are such that when they are distended or extended, as seen a Fig. 10, the pulled-out tube *b* will have its head *c* come to a stop against the inner end of the socket *a* of the handpiece H, while the inner end of rod *e* will be prevented from pulling entirely out of tube *b* by a projection therefrom that comes against an interior stop or shoulder in the outer end portion of said tube. Near the outer hooked end of rod *e* is a small laterally-projecting lug *m*, which is adapted to pass into the longitudinal cut-out *i* at the outer end of tube *b*, on one side of the latter, and also into a zigzag cut-out or channel *s* in the outer end portion of the handle-socket *a*, and the arrangement and operation of these devices are such, as shown, that when the hook-rod *e* shall have been closed into the tube *b*, as indicated at Fig. 9, the lug *m* will pass into the cut-out *i*, and so that when the two closed parts *b* and *e* shall have been pushed inwardly of the socket *a* the lug *m* will first pass into the longitudinal part of the channel *s* of said socket and will afterward, by a relative turning movement of the parts, move along in the nearly horizontal portion of *s* into the position seen at Fig. 9. In this condition of all the parts the implement or device is closed up for disuse or for convenient carriage. As seen at Figs. 9 and 10, the lateral part of the channel *s* is made slightly oblique to the axis of the sliding parts, the object of this being to cause the lug *m* to draw the closed-up parts home tight, so that they will not be liable to any casual opening out or distention.

At Fig. 11 I have shown still another species of my new device or implement in which are used a hook to engage with the car-strap, a handpiece of convenient size and shape to be comfortably grasped within the hand of the person using the implement or article, and a cord or other flexible connection by which the said hook and said handpiece are coupled together. The hook C is preferably made of steel and of about the shape shown, though of course it may be shaped differently, and the metallic handpiece D is of the proper size and shape to be conveniently held onto with the hand. E is a cord (but may be a light, strong, and very flexible chain) one end of which is securely fastened, as seen, to hook C, and the other end of which is connected to the shank *f* of the handpiece D. In practice this device is collapsed, or has the metallic parts C and D laid together, and has the cord or chain (or a small strap) E wrapped around about the metallic parts or folded up when the implement is not in use, in which case it can be carried by a lady in the hand, or in a hand-bag, the dress or coat pocket, or other receptacle, or it may have its cord E looped or loosely tied around the wrist or arm of the person carrying it. When in use, the hook C is simply engaged by hand with the car-strap, whereupon the user grasps the depending handpiece and thus supports or steadies the person. The cord E may be of any suitable length, preferably about eight to ten inches. If found expedient, the hook C may have a longer shank and the cord be made proportionately shorter. Of course a device such as I have herein shown and described may also be used with great comfort and convenience by boys and men of short stature, or who are not strong enough to comfortably bear the strain of hanging or holding onto the usual car-strap, and it will be seen that by the use of my invention not only will great comfort be afforded to persons who have to ride standing in street-cars, but, furthermore, direct contact of the ungloved hand with the car-straps will be avoided, which contact, as is well known, is often a fruitful source of disease contamination.

It is well known that the car hand-strap is often the means of conveying disease, and hence in a mere sanitary aspect my invention possesses great merit.

I wish it to be understood that so far as the broad idea involved in my new device is concerned my invention may be carried into effect under various forms other than those I have shown, and that therefore I desire to claim, broadly, the invention I have herein shown and described.

I claim as new and desire to secure by Letters Patent—

1. As a means by which a person may be conveniently and comfortably steadied, or sustained, in a standing position, while riding in a car, a strap-holder device adapted, at one end, to be easily engaged with and disengaged from the ordinary pendent car-strap; and, constructed at the other end with a handle-like portion adapted to be comfortably and conveniently grasped by the hand of the person to be supported; all substantially as hereinbefore set forth.

2. A car-strap-holder device adapted to be carried on the person, which is capable of being extended, or lengthened, to afford its user a convenient means of support from the said strap, as specified; and, which may be contracted, or closed up, within a much smaller space, for convenient carriage by the person, when not in use; all as hereinbefore set forth.

3. A portable car-strap holder, or steadying device, adapted to be carried by the passenger, comprising a strap-engaging hook; a handle, or handpiece; and a flexible device by which the hook and handpiece are coupled together; all substantially in the manner and for the purposes hereinbefore set forth.

In witness whereof I have hereunto set my hand this 5th day of August, 1896.

J. N. McINTIRE.

In presence of—
M. RATH,
L. F. SELVA.